



Aviation Investigation Final Report

Location:	GIRDWOOD, Alaska	Accident Number:	ANC01LA020
Date & Time:	November 11, 2000, 13:00 Local	Registration:	N216EH
Aircraft:	Eurocopter AS-350B2	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The airline transport certificated pilot was maneuvering a helicopter over snow-covered terrain along a mountain ridge while conducting a photo flight. The end of the ridge line was in a shadow. While flying in the area of shadow, the pilot began to lose depth perception, and he added engine power to move away from the ridge. The left landing gear skid tube made contact with snow on the ridge, and the pilot felt a vibration. He landed on lower terrain and shut down the helicopter. A subsequent inspection of the helicopter disclosed internal damage to the tail rotor spars, and a torsional twist in the tail rotor drive shaft.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain adequate altitude/clearance from terrain. A factor in the accident was flat light conditions.

Findings

Occurrence #1: DRAGGED WING, ROTOR, POD, FLOAT OR TAIL/SKID
Phase of Operation: MANEUVERING

Findings

1. TERRAIN CONDITION - MOUNTAINOUS/HILLY
2. TERRAIN CONDITION - SNOW COVERED
3. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

4. (F) LIGHT CONDITION - OTHER
5. ROTOR DRIVE SYSTEM, TAIL ROTOR DRIVE SHAFT - TWISTED

Factual Information

On November 11, 2000, about 1300 Alaska standard time, a high skid equipped Eurocopter AS-350-B2 helicopter, N216EH, sustained substantial damage while maneuvering over snow-covered terrain, about four miles east of Girdwood, Alaska. The helicopter was being operated as a visual flight rules (VFR) on-demand passenger flight under Title 14, CFR Part 135 when the accident occurred. The helicopter was operated by ERA Aviation Inc., Anchorage, Alaska. The airline transport certificated pilot, and the sole passenger, were not injured. Visual meteorological conditions prevailed. VFR company flight following procedures were in effect. The flight originated at the Girdwood airport, about 1115.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on November 21, 2000, the vice president of safety for the operator reported that the pilot was conducting a photo flight in the area of Mount Alyeska. According to the vice president, the pilot related that he was maneuvering along a mountain ridge. The end of the ridge line was in a shadow. While flying in the area of shadow, the pilot began to lose depth perception, and he added engine power to move away from the ridge. The left landing gear skid tube made contact with snow on the ridge, and the pilot felt a vibration. He landed on lower terrain and shut down the helicopter. A subsequent inspection of the helicopter disclosed internal damage to the tail rotor spars, and a torsional twist in the tail rotor drive shaft.

Pilot Information

Certificate:	Airline transport; Commercial	Age:	48, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	October 27, 2000
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	6940 hours (Total, all aircraft), 298 hours (Total, this make and model), 5394 hours (Pilot In Command, all aircraft), 97 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter	Registration:	N216EH
Model/Series:	AS-350B2 AS-350B2	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	3184
Landing Gear Type:	High skid	Seats:	6
Date/Type of Last Inspection:	November 2, 2000 AAIP	Certified Max Gross Wt.:	4961 lbs
Time Since Last Inspection:	8 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	1096 Hrs	Engine Manufacturer:	Turbomeca
ELT:	Installed, not activated	Engine Model/Series:	ARRIEL 101
Registered Owner:	ERA AVIATION INC.	Rated Power:	712 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	ERAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	-2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	GIRDWOOD , AK (AQY)	Type of Flight Plan Filed:	Company VFR
Destination:		Type of Clearance:	None
Departure Time:	11:15 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	60.899974,-148.909591(est)

Administrative Information

Investigator In Charge (IIC):	Erickson, Sc0tt
Additional Participating Persons:	CHARLES HAMILTON (FAA); ANCHORAGE , AK
Original Publish Date:	July 10, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=50702

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).